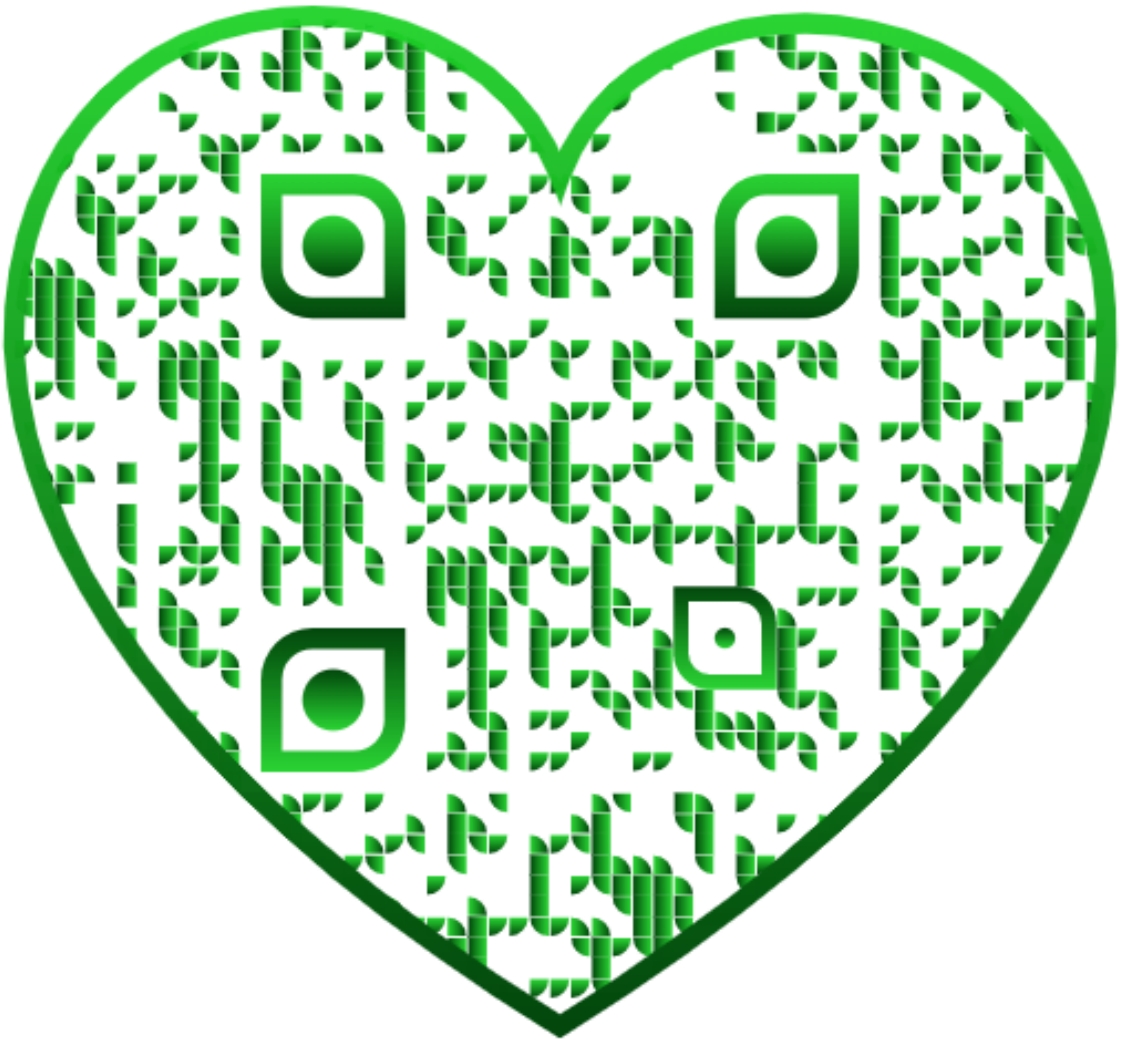
ECZEMA & ALLERGIC CONTACT DERMATITIS



Eczema-Dermatological Definition

- An acute, subacute but usually chronic pruritic inflammation of the epidermis and the dermis, often occurring in association with a personal family history of hay fever, asthma, allergic rhinitis or atopic dermatitis. [1]
- NOTE :- pruritic : اهم كلمة في التعريف

1 Color Atlas and Synopsis of Clinical Dermatology

Characteristics of Acute **Eczema**

- Well demarcated plaques of **erythema and edema** on which are superimposed and closely spaced small vesicles filled with clear fluid with punctate erosions and crusting

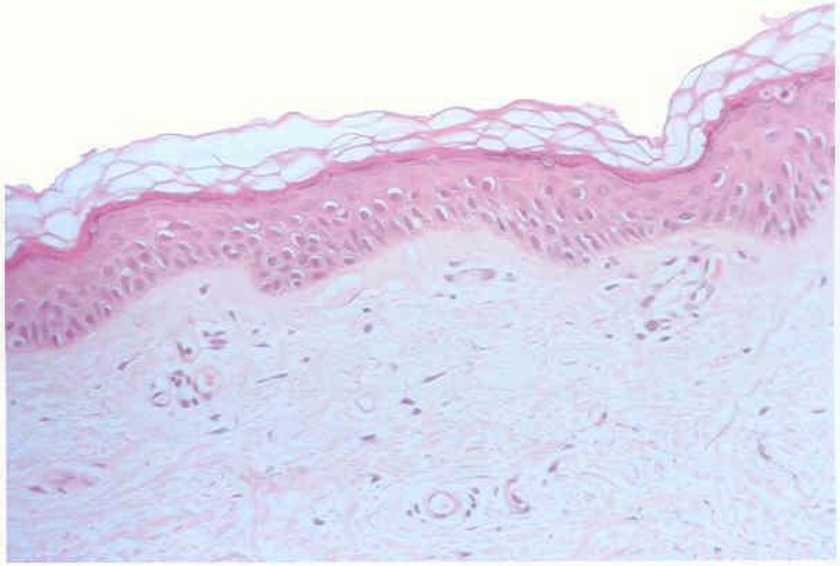
- Distribution may be isolated and localized or general

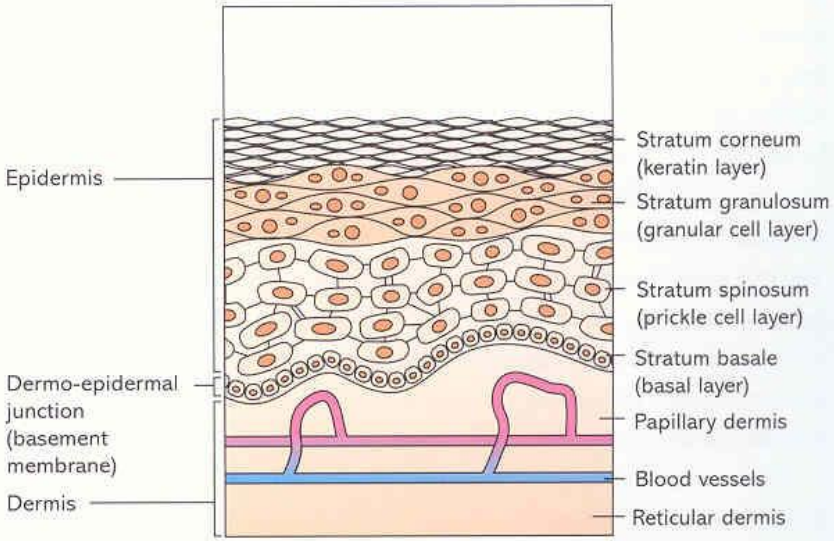
Acute **Eczema**

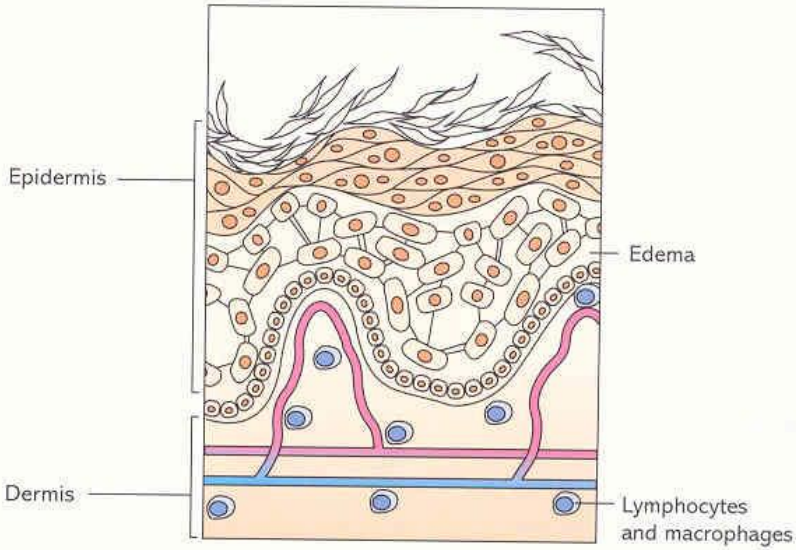
(Note the erythema, vesicles and swelling)

- Term dyshidrotic is a misnomer as sweat glands are not involved
- Also known as pompholyx

- NOTE : -Acute : 7-10 days.




Epidermis
Stratum corneum (keratin layer)
Stratum granulosum (granular cell layer)
Stratum spinosum (prickle cell layer)
Stratum basale (basal layer)
Dermo-epidermal junction (basement membrane)
Papillary dermis
Blood vessels
Dermis
Reticular dermis


Epidermis
Edema
Dermis
Lymphocytes and macrophages

Characteristics of Subacute Eczema

- Plaques of mild erythema with small dry scales and or superficial desquamation, sometimes associated with small red, pointed or round papules

- Distribution may be isolated and localized or general

Subacute **Eczema**

- Note erythema, swelling and desquamation

Characteristics of Chronic **Eczema**

- Plaques of **lichenification** with deepening of the skin lines with satellite, small, firm flat or round top papules, excoriations and pigmentations or mild erythema

  Distribution – isolated and localized or generalized

Chronic **Eczema**

- Note lichenification, scaling and fissuring

- NOTE :- lichenification : thickening of skin with hypo or hyper –pigmentation.

Acute - Subacute - Chronic

Swelling and erythema

Punctate erythema, desquamation

Lichenification

Acute, Subacute or Chronic?

- Check for erythema, swelling, desquamation, lichenification

Acute, Subacute or Chronic?

- Check for erythema, swelling, desquamation, lichenification

Classification of Eczema/Dermatitis

Historically

- **Endogenous (occurring from within) dermatitis** was given the name **"eczema"**

- **Exogenous dermatitis (occurring from without)** was termed "**dermatitis**"

Classifications of Eczema

Endogenous

- Atopic or IgE
- Seborrheic
- Discoid or nummular
- Pompholyx
- Venous
- Asteatotic
- Juvenile plantar
- Erythoderma

Exogenous

- Allergic
- Toxic irritant contact
- Photosensitive

Atopic/IgE Eczema (endogenous or exogenous?)

Characteristics:

- 60% have onset in the first year of life
- Influenced by genetics and environmental factors
- More common in males that females
- Ethnicity may be a factor –less common in Asians; more common in Westerners and higher socioeconomic families
- Theory is - manifestation of well nourished immune system rarely challenged by infection
- Rare to have adult onset
- 2/3 of patients have family history of asthma, hay fever or allergic rhinitis

NOTE:-

- تظهر في الاطفال قبل عمر سنتين وتكون اكثر شيء على الخدين

the most common site is check.

Atopic/IgE Eczema cont.

- **Characteristics:**
- May persist months to years
- All patients have dry skin
- Exacerbations caused by allergens, stress, hormones, climate, skin dehydration
- Physical characteristic may include all phases

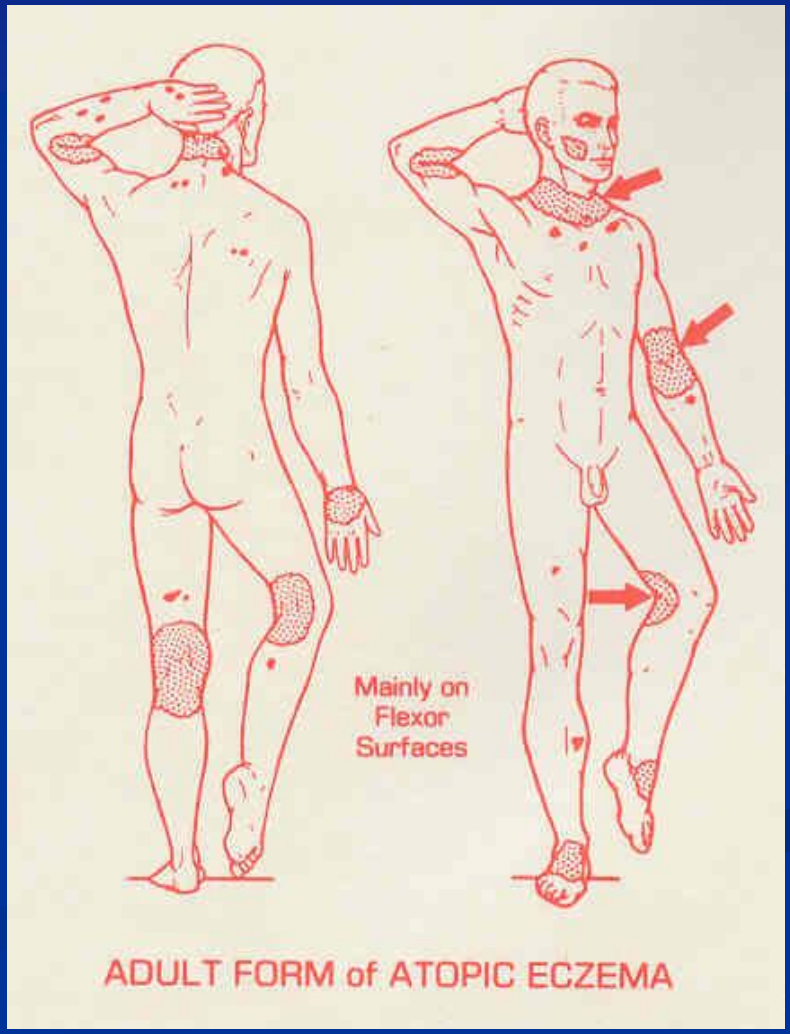
Distinctive Characteristics:

- Lesions are usually bilateral
- Located frequently in skin folds/creases and flexor surfaces

Atopic/IgE Eczema Distribution

Note:

- **Bilateral**
- **Skin folds and flexor surfaces**



Infants

- Infants often present with acute lesions.
- Poorly defined erythema with edema, vesicles, excoriations, and serous exudate.
- Typically involvethe face and the extensor surfaces of the limbs.
- The trunk might be affected but the nappy area is typically spared.

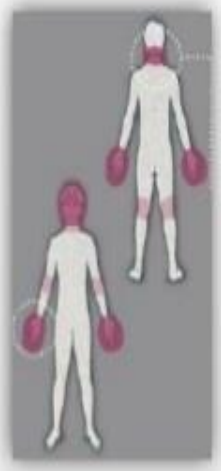
Childhood

(aged 2 years and older)

- Eczema becomes more localised and chronic than in infancy.

- Paler erythema, dry skin (xerosis), poorly defined lesions
- Commonly affecting flexor surfaces with thickening (lichenification) of chronic areas.

Adults



- Adolescents and adults usually have diffuse eczema.
- They can also have localised lesions typically affecting hands, eyelids, and flexures.
- Adults can have chronic hand eczema only or head-neck dermatitis as well, involving the upper trunk, shoulders, and scalp.

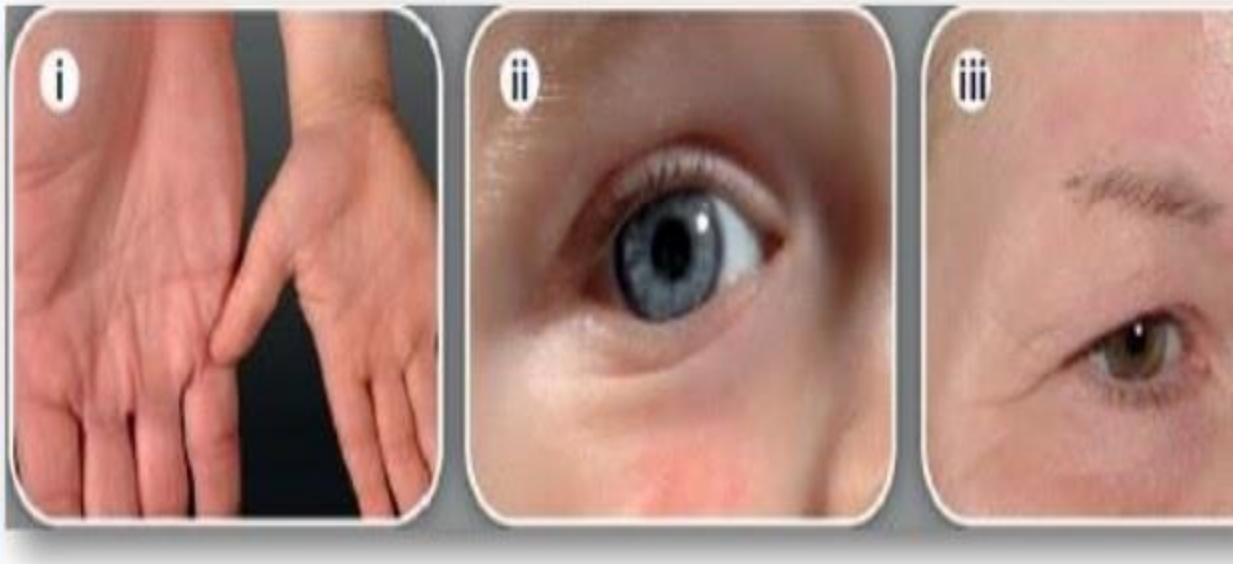
Langan SM, Irvine AD, Weidinger S. Atopic dermatitis. Lancet. 2020;396(10247):345–60.

NOTE:-

- **The most common in adults Atopica eczema.**

Associated non-specific features

- **Hyperlinearity of palms and soles**
  : mostly seen in patients with *FLG* mutations or ichthyosis vulgaris
- **Dennie-Morgan infraorbital folds**
- **Hertoghe's sign.**



NOTE:-

- **may be acute, swelling eczema**
- **hyperlinearty of palms & solos, patients mostly come with thickness.**
- **hertoghe's sign:- thinning or complete loss of the lateral one third of eyebrows.**
  this is associated with atopic eczema but may be come with other diseases like hypothyroidism .

Diagnostic

- The diagnosis of AD is based on one's history and clinical manifestations, such as morphology and the distribution of skin lesions.
- In 1980, major and minor criteria for a diagnosis of AD were proposed by Hanifin and Rajka.
- Three of four major criteria and three of 23 minor criteria are required for a diagnosis of AD.

Features to be considered in the diagnosis of patients with atopic dermatitis by Hanifin & Rajka (1980)

Major features (3 of 4 required)
1. Pruritus
2. Typical morphology and distribution
2.1 Flexural lichenification or linearity in adults
2.2 Facial and extensor involvement in infants and children
3. Chronic or chronically-relapsing dermatitis
4. Personal or family history of atopy, such as asthma, allergic rhinitis, atopic dermatitis

Activate Wind

NOTE:-

- **the most character of major features is prurites. Atopic eczema mostly come with chronicity**
- **normal serum hygiene (100), but in this disease it’s more than 2000.**

Minor features (3 of 23 required)	
1. Xerosis	17. Anterior neck fold
2. Ichthyosis/palmar hyperlinearity/keratosis pilaris	18. Itch when sweating
3. Immediate (type 1) skin test reactivity	19. Intolerance to wool and lipid solvents
4. Elevated serum immunoglobulin E	20. Perifollicular accentuation
5. Early age of onset	21. Food intolerance
6. Tendency toward cutaneous infections (*S. aureus* and Herpes simplex virus)/impaired, cell-mediated immunity	22. Course influence by environmental/emotional factors
7. Tendency toward non-specific hand or foot dermatitis	23. White dermographism/delayed blanch
8. Nipple eczema	
9. Chelitis	
10. Recurrent conjunctivitis	
11. Dennie-Morgan infraorbital fold	
12. Keratoconus	
13. Anterior subcapsular cataract	
14. Orbital darkening	
15. Facial pallor/facial erythema	
16. Pityriasis alba	

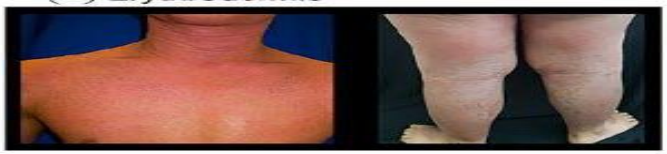
NOTE:-

- **pityriasis alba:- benign skin disorder characterized by oral hypopigmenteted lesion with fine scales.**

NOTE:-

Disease	Age	Morphology	Distribution	Symptoms
AD	Childhood	Erythematous eczematous weepy plaque with fine dry scale	Face, scalp, Extensor surfaces in infants, flexural surfaces in children, trunk, nails	Severe pruritus
Seborrheic dermatitis	Any age	Salmon-pink fine papules coalescing into poorly defined plaques with variable greasy scaling.	Face, scalp, Retroauricular folds, neck, axillae, inguinal folds	Absent to mild-moderate pruritus
Psoriasis	Any age	Well-demarcated, pink plaques with adherent silvery scale, confluent bright red plaque with sharply defined borders and relative lack of scale.	Extensor surface of joints (elbows, knees) and extremities, Retroauricular folds, axillae, umbilicus, diaper area, inguinal folds, genitalia, gluteal cleft, nails	Mild-moderate pruritus
Allergic contact dermatitis	Any age, incidence increases with age	Geometric erythematous eczematous weepy plaques	Based on exposure	Severe pruritus
Scabies	Any age	Poorly defined erythematous papules, nodules, burrows, pustules, and vesicles	Wrists, interdigital spaces, axillae, umbilicus, nipples, diaper area,	Severe nocturnal pruritus
Mycosis fungoides	Adulthood, Hypopigmented MF More common in children	erythematous patches, papules, or plaques with subtle scale; polycyclic or annular, hypopigmented patches, often with fine scaling	Buttock, lower trunk, thighs, breasts, and groin	Pruritus
Dermatomyositis	Childhood and middle age	Violaceous scaly papules, Periorbital violaceous edema	Small joints of hands and elbows, face	Myositis
Immunodeficiency and metabolic disorders	Infancy	Eczema or eczema-like eruption, erythroderma	Spread, resistant to treatment	Other cutaneous and extracutaenous manifestations Blood testing and genetic investigations upon diagnostic hypothesis

NOTE:-

Phenotype	Differential diagnoses
(a) Nummular (discoid) dermatitis	• Plaque psoriasis • Mycosis fungoides • Parapsoriasis • Tinea corporis • Allergic contact dermatitis (ACD) • Xerotic (asteatotic) dermatitis • Stasis dermatitis
(b) Prurigo nodularis (PN)	Prurigo nodularis can also be associated with: • Chronic kidney disease • Diabetes mellitus • Psychiatric disorders • Infections • Neuropathic diseases
(c) Erythrodermic 	• Psoriasis • Seborrheic dermatitis • Allergic Contact Dermatitis • Irritant contact dermatitis • Pityriasis rubra pilaris • Sezary syndrome • Drug reactions
(d) Lichenoid dermatitis	• Lichen planus
(e) Follicular/papular dermatitis	• Keratosis pilaris • Phrynoderma (vitamin A deficiency) • Lichen spinulosus • Lichen nitidus • Pityriasis rubra pilaris
(f) Dyshidrosis or Pompholyx	• Contact dermatitis • Adverse drug reactions • Pustular psoriasis • Vesicular *tinea pedialtinea manus* • Scabies • Herpes simplex • Hyperkeratotic orthergic hand eczema • Bullous disorders (pemphigoid, pemphigus, epidermolysis bullosa)

Atopic/IgE Eczema cont.

Confused with:

- Scabies, seborrhea, psoriasis and, contact dermatitis

NOTE:-

- **itching cycle:-**
  scratching which causes stimulation of the nerve end
  increase the itching
  eventually causes 2ry bacterial infection.

- **topical steroid is given to patients more than 2 years old.**

Atopic/IgE Eczema cont.

- **Treatment:**
- Avoid scratching, clean and cool environment, use of soap substitutes
- Emollients
- Topical steroids
- Topical immunomodulators –tacrolimus
- Systemic antihistamines
- Soaks
- Tar preparations

Atopic/IgE Dermatitis

Allergic (Contact)Eczema (exogenous or endogenous?)

Characteristic:

- Delayed, cell mediated hypersensitivity
- Strong sensitizer results in reaction soon after exposure
- Weak sensitizer my take months or years to develop reaction
- Age does not influence capacity for sensitization but more common in adults
- Black skin is less susceptible
- Important cause of disability in industry
- Non seasonal

Allergic (Contact) Eczema cont.

Characteristics:

- usually clears quite rapidly on withdrawal of offending agent
- may appear as erythematous papules, vesicles or bullous
- more common where epidermis is thinner

Distinctive Characteristics:

- Initial lesions usually limited to contact area
- not bilateral
- lesions with sharp borders or angles are pathognomonic

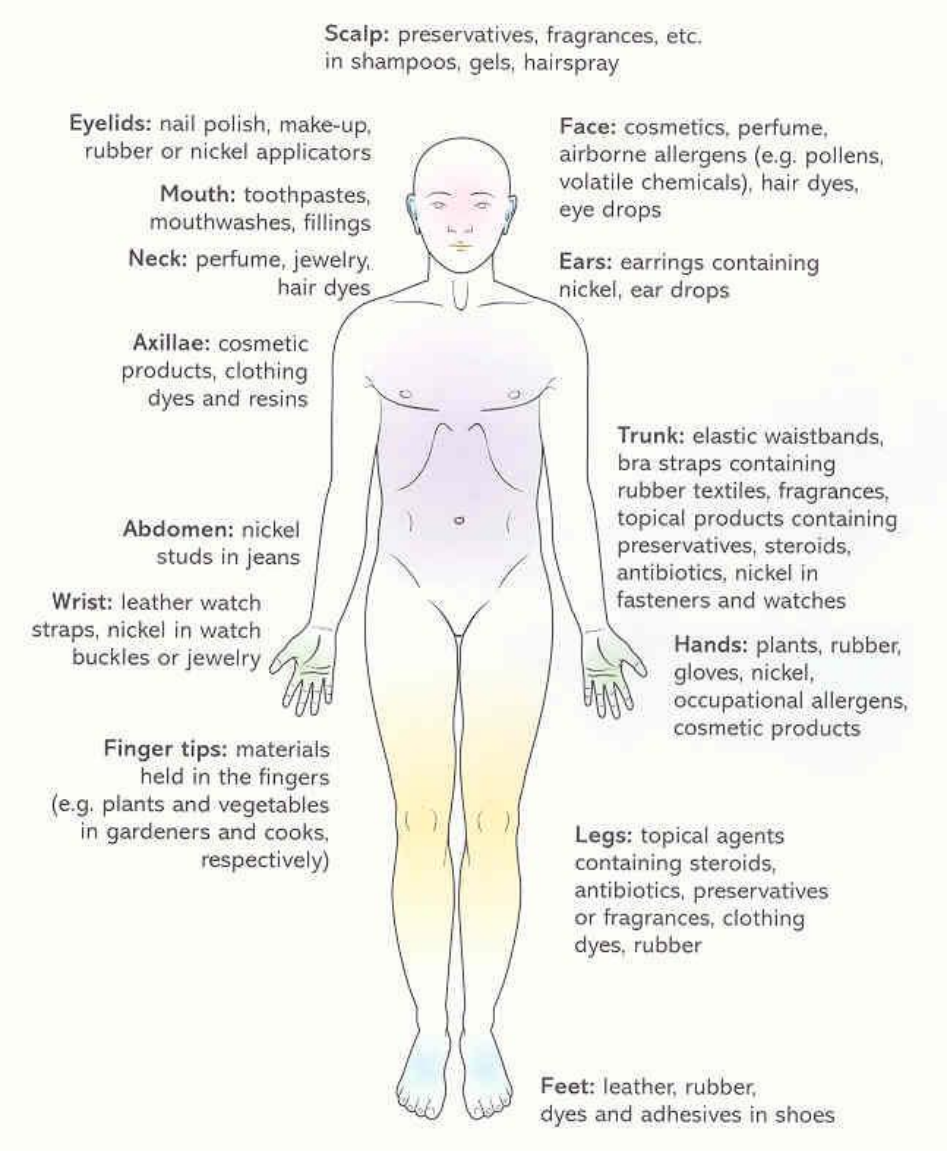
Causes of Allergic/Contact Eczema

- Metals- nickel, platinum (10% of women)
- Detergents
- Plants and fibers
- Chemicals and dyes
- Polyethylene glycol and polysorbate 60
- Topical antibiotics and medications
- Animal keratin

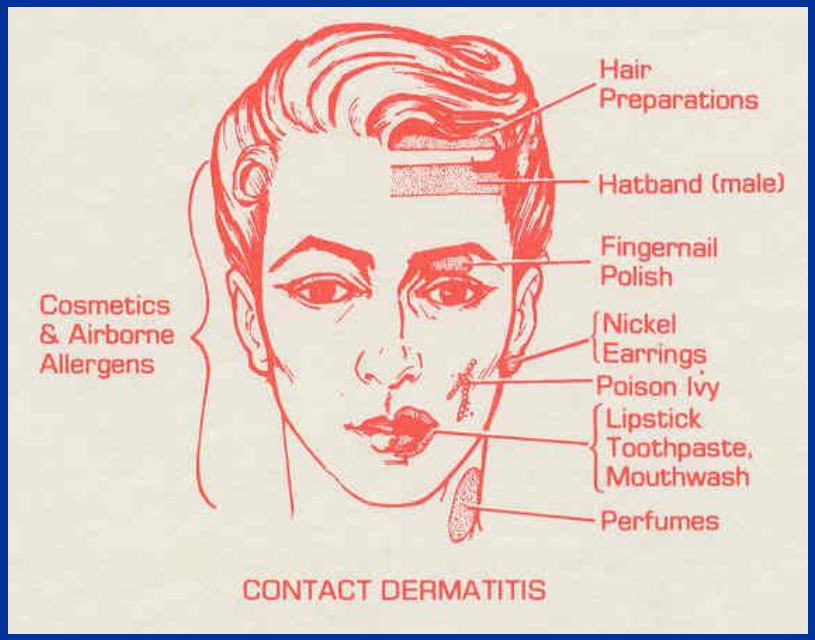
Allergic/Contact Eczema
cont.

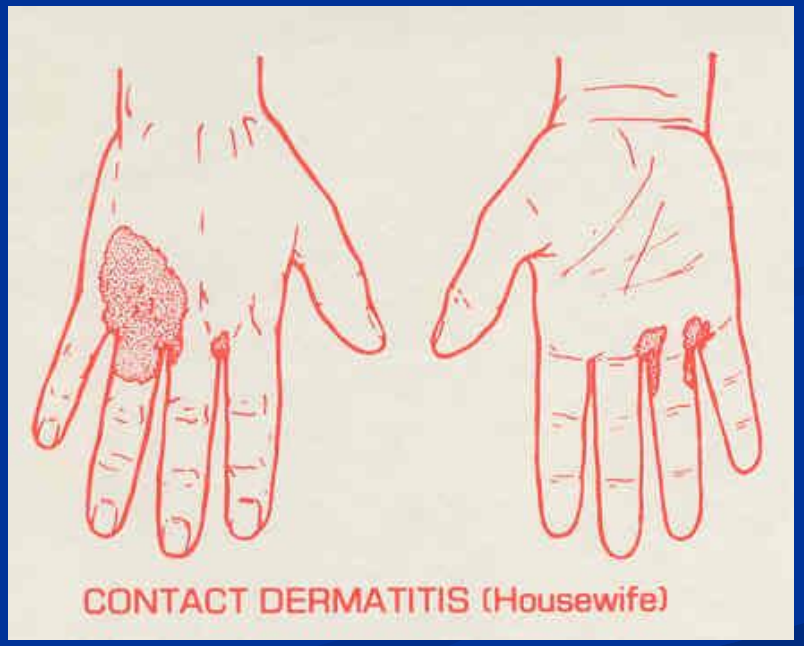
- **Treatment** – remove causative agent, Burow's soaks 1:40, or saline 1tsp/pt warm water, Aveeno or oatmeal baths, calamine
- Systemic antihistamines
- Topical steroids, oral steroid taper
- Antibiotics for secondary infection
- **Confused with** – Atopic eczema, seborrhea, HSV

Allergic/ Contact Eczema Distribution


Scalp: preservatives, fragrances, etc. in shampoos, gels, hairspray
Eyelids: nail polish, make-up, rubber or nickel applicators
Mouth: toothpastes, mouthwashes, fillings
Neck: perfume, jewelry, hair dyes
Axillae: cosmetic products, clothing dyes and resins
Abdomen: nickel studs in jeans
Wrist: leather watch straps, nickel in watch buckles or jewelry
Finger tips: materials held in the fingers (e.g. plants and vegetables in gardeners and cooks, respectively)
Face: cosmetics, perfume, airborne allergens (e.g. pollens, volatile chemicals), hair dyes, eye drops
Ears: earrings containing nickel, ear drops
Trunk: elastic waistbands, bra straps containing rubber textiles, fragrances, topical products containing preservatives, steroids, antibiotics, nickel in fasteners and watches
Hands: plants, rubber, gloves, nickel, occupational allergens, cosmetic products
Legs: topical agents containing steroids, antibiotics, preservatives or fragrances, clothing dyes, rubber
Feet: leather, rubber, dyes and adhesives in shoes

Allergic/ Contact Eczema Distribution





Note:
distribution

Note:

Linear distribution with satellite lesions

What do you think?

Bilateral but…..

Subacute Allergic Eczema

- Note slight swelling and erythema
- No lichenification
- Location – what could be the cause?

Chronic Allergic Eczema

- Note the hyperkeratosis, lichenification and fissuring

Toxic / Irritant Eczema
(occurring in non allergic skin)

- Characteristics:
- Accounts for 75% of exogenous eczema
- Age, race and sex are insignificant
- Results from repeated exposure to toxic or subtoxic agents
- Severity of skin symptoms vary with the individual and the type of irritant and the length of contact
- Includes sx of itching, stinging and burning
- Usually associated with chronic disturbance of the barrier function of the skin

Toxic/Irritant Eczema cont.

Common causes:

- Repeated exposure to alkaline detergents
- Repeated exposure to organic solvents
- Corrosive agents
- Industrial chemicals
- Chronic self perpetuating habits that irritate the skin

Toxic/Irritant Eczema cont.

Treatment:

- Remove the cause
- Application of emollients
- Use of soap substitutes
- Barrier creams
- Borrow's or potassium permanganate soaks twice daily

Biopsy/testing- usually not necessary

Acute Toxic/Irritant Eczema

Note: distribution, swelling and weeping

Subacute Toxic/Irritant Eczema

Lip licking

- often seen in children who have atopic eczema
- Variant of irritant eczema

compare

Chronic Toxic/Irritant Eczema

- Note:papulosquamous dermatosis with hyperkeratosis, maceration, fissuring and erosions
- Eruptions tend to be sore rather than itching

Acute, subacute, or chronic?

Swelling? Erythema? Desquamation? Lichenification?

Comparison of Classifications of the 3 common types of eczema

ACUTE	Atopic IgE	Toxic/ Irritant	Allergic Contact
Erythema	X	X	X
Papules	X	NA	X
Vesicles	X	X	X
Erosions	X	X	X
Crusts	X	X	X
Scales	X	NA	X
Sharp/ confined	NA	X	X
Spreading peripherally	Flexor surfaces, neck, eye lids, d foot	X	NA
Onset rapid	Before age 12	X	Usually as adult
Onset slow	NA	NA	X
Concentration L/H	NA	H	L
Incidence	Other signs	Anyone	Sensitized

Comparison of Classifications

Chronic	Atopic IgE	Toxic/Irritant	Allergic/Contact
scaling	X	X	X
fissues	X	X	X
crusts	NA	X	X
papules	NA	X	X
excoriation	X	NA	X
lichenification	X	NA	X
Periorbital pigmentation	X	NA	NA
Infraorbital folds in the eyelids	X	NA	NA
Foillicular papules	X more common in the black pop.	NA	NA

Pompholyx (from Greek word meaning blister)

- Characteristics:
- Intense itching and burning proceed lesions
- Blisters and vesicles on hands/ feet
- Becomes highly exudative
- Dries up in about 2 wks leaving painful fissuring
- Acute symptom of a chronic problem
- Usually no cause but can be due to trichophytin and associated with fungal infection of the feet

Pomhpolyx cont.

- Treatment:
- Avoidance of soap
- Emollients
- Soaks (burrows or potassium permanganate)
- Potent or very potent topical steroids with or with occlusion
- Antibiotics for infection
- Systemic steroids
- Coal tar extracts
- Biopsy/testing- usually not necessary

Pompholyx

Where else should you look?

What else might this be call?

Nummular Eczema

- **Characteristics:**
- **usually -**personal or family history of allergy, especially asthma, hay fever, and childhood eczema

- **Distinctive Characteristics -** Coin-shaped papulovesicular patches that develop in to scaling and crusting lesions; lesions may be as large as 4-5cm in diameter with distinct margins, initial eruptions on arms and legs; intense itching; tends to be chronic

Nummular Eczema cont.

- **Characteristics:**
- Most severe during winter; may be aggravated by systematic administration of iodine or bromine; secondary bacterial infections are common

- **Treatment:** skin hydration, topical corticosteroids, intralesional injection, coal tar ointments, UVB treatment, treat secondary infection

Nummular Eczema cont.

- **Confused with** – contact dermatitis/eczema, atopic eczema, psoriasis, impetigo, tinea corporis
- **Biopsy/testing –** not usually necessary

Note:

- **Coin shaped lesions**
- **dorsal surface arms**
- **bilateral**

What else should you think about?

Seborrehea

- **Characteristics:** Positive family history is common
- Seen in all age groups equally
- May occur on presternal area and mid upper back
- Stress may increase symptoms
- Pityrosporum ovale may be causative factor

- **Distinctive Characteristics:**
- Red greasy scaling rash consists of patches and plaques with indistinct margins and an underlying red glazed look to the skin
- Most commonly located in the hairy areas, nasolabial folds, retroauriclar folds
- Excoriations from scratching are rare

Seborrhea cont.

Treatment:

Scalp –

- try OTC preps first (antidandruff, tar or ketoconazole shampoo)
- Steroid lotions for very short term use
- 10% Liquor Carbonis Detergens HS and shampoo in AM with Dawn Detergent

Skin -

- try OTC's first
- corticosteroids (mild to moderate potency) and/or ketoconazole topically

Seborrhea cont.

Eye lashes-

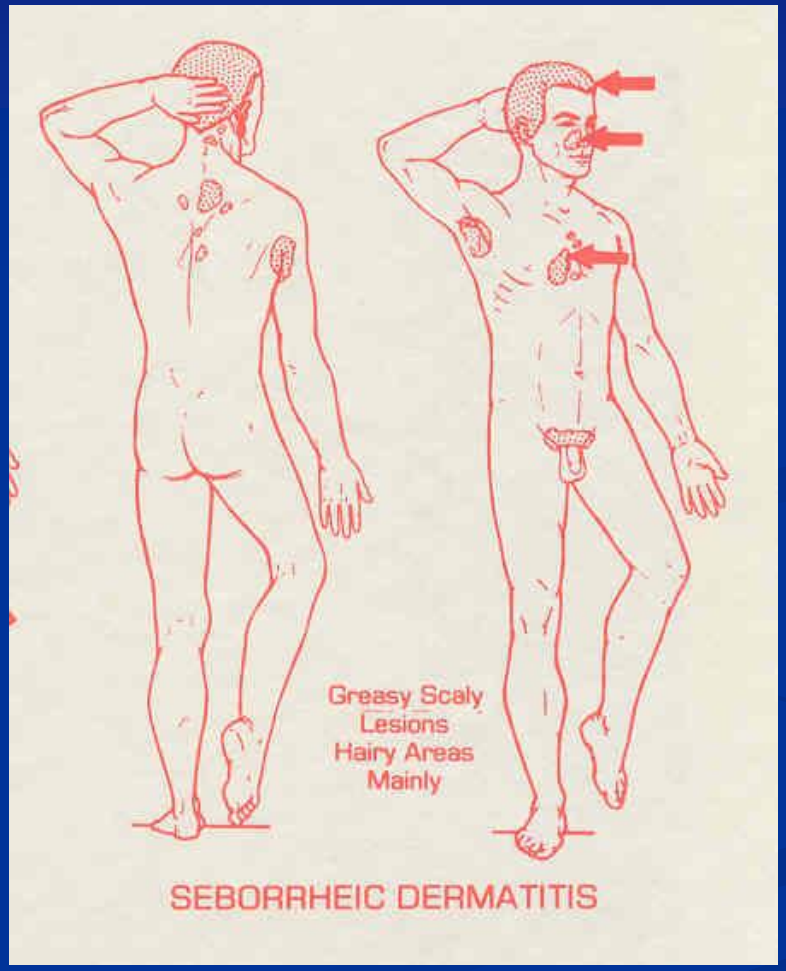
- Warm compresses and gentle debridment with Q tip
- Sulfacetamide ophthalmic ointment applied topically

** Areas that become exudative may be treated with potassium permanganate or burrow's soaks

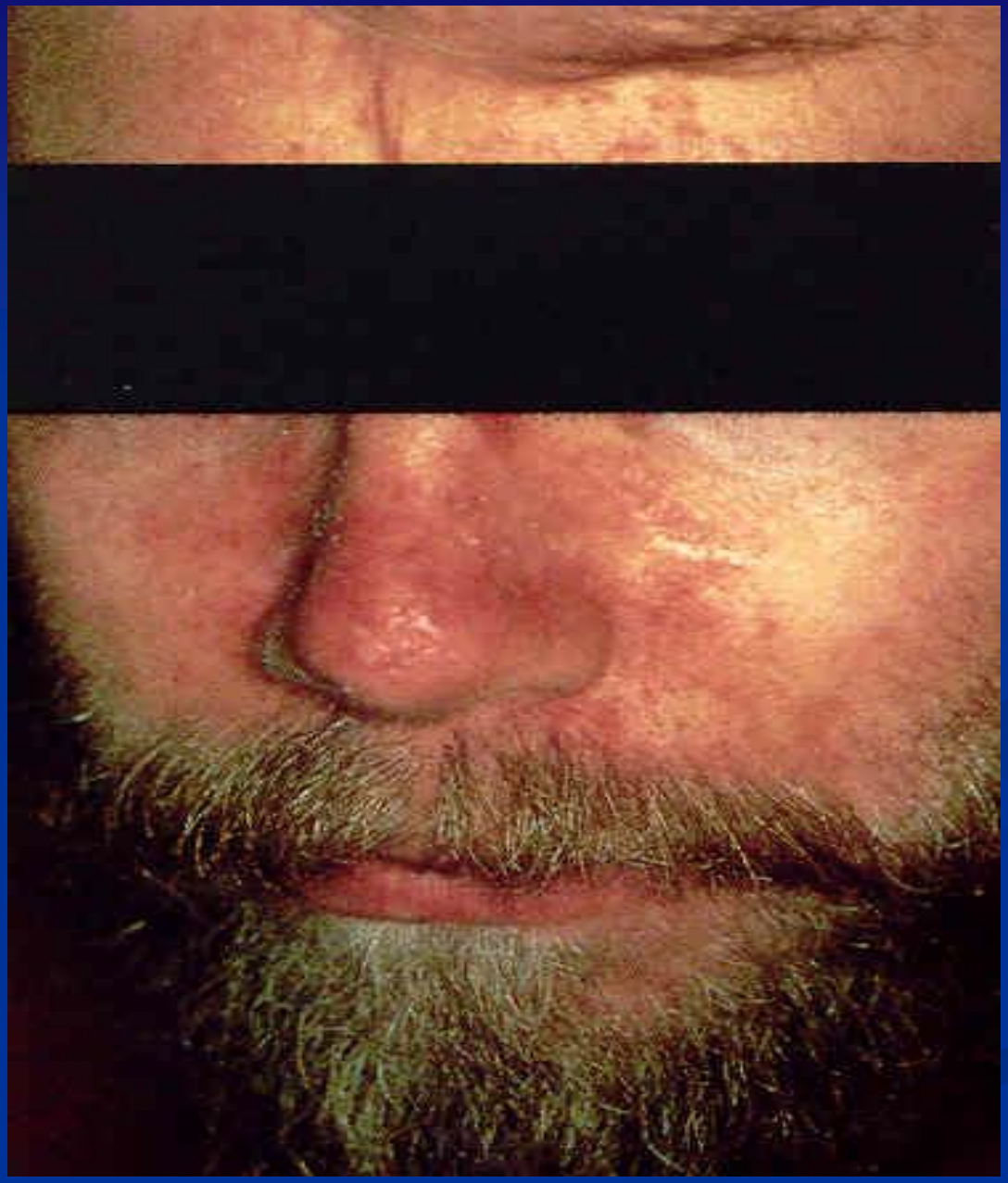
Confused with – atopic dermatitis, eczema, psoriasis, discoid lupus, tinea

Biopsy/testing – usually none

Seborrhea Distribution



What else could this be?



Asteatotic Eczema (Xerotic Eczema, "Winter Itch")

Characteristics:

- Seen mainly in elderly
- Worse in the winter
- Precipitated by excessive washing

Treatment:

- Avoid excessive washing and use of soap
- Emollients
- Increase humidity in the environment
- Topical steroids for a short periods of time

Localized Neurodermatitis Cont.

- **Treatment:**
- Stop the scratching
- Occlusive steroid dressings esp. at night
- Lubrication
- Doxepin ointment and/or po 10-20mg
- Hydroxyzine at night
- Intralesional steroid injection
- Stress management and/or medication
- Treatment is longterm and may be unsatisfactory
- **Confused with** – atopic eczema, psorasis, tinea, seborrhea
- **Biopsy / testing** – none usually necessary

Localized Neurodermatitis
(known as Lichen Chronicus Simplex)

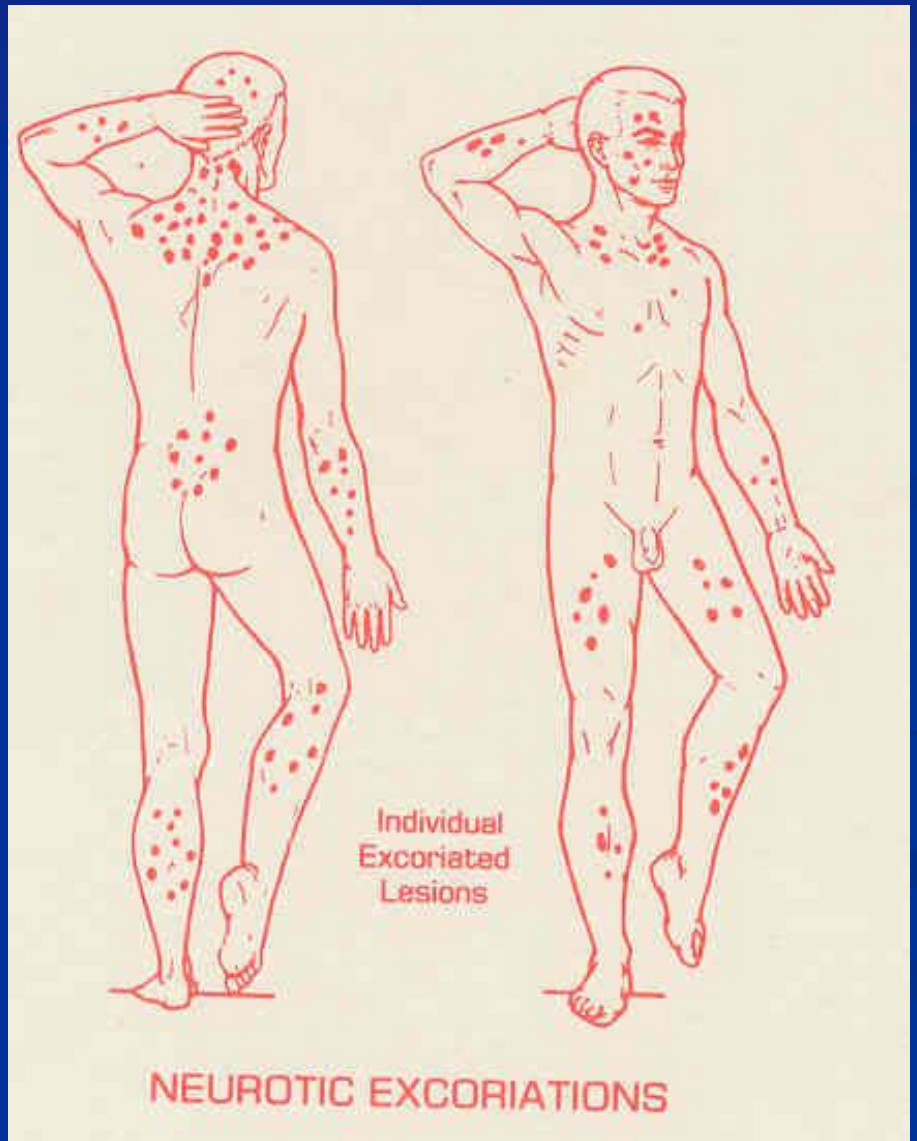
- **Characterisitcs:**
- Origin often small patch of dermatitis or insect bite starting the itch –scratch- itch cycle
- Condition unrelated to allergies or family history
- More common in women
- Nonseasonal
- aggravated by stress
- worse at night
- may be secondary to atopic eczema, contact dermatitis, lichen planus, psoriasis, or insect bite

Localized Neurodermatitis
(known as Lichen Chronicus Simplex) CONT.

Distinctive Characteristics:

- Lesions lichenified or excoriated
- usually limited to a single patch at hairline of nape of neck or on wrists, ankles, ears, or anal area
- Not bilateral
- Llichenification of dark skin develops a “follicular pattern”

Localized Neurodermatitis Distribution
(known as Lichen Chronicus Simplex)



What should you think about in this man?

Summary of Treatment

1. **Conservative Therapy**
   a) Education (chronicity, prevention, and trigger id)
   b) Use of astringents and emollients/moisturizers
   c) OTC products (hydrocortisone, Benadryl, Calamine, etc.)
2. **Low to mid potency steroid creams**
3. **High potency steroid creams**
4. **Immunomodulators -** Elidel and Protopic creams
5. **Nontraditional agents**
6. **PO therapy:** antiprurutics, steroids, cyclosporine, methotrexate
7. **Coal Tar**
8. **PUVA therapy** (phototherapy)